CUBASE

VST

for Windows

Troubleshooting

Steinberg

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Troubleshooting in Cubase VST

This document contains information related to problems that can occur with your hardware setup. Some problems manifest themselves not just as simple hardware errors, but may have subtle effects on the working of the program as a whole.

Please refer to the “Getting Started” manual for general information on how to adjust your settings. For more detailed information, please read the chapter: “Optimizing Audio Performance” in the online documentation (Getting Into the Details). That chapter will also give you a comprehensive introduction to hardware related issues such as the ones that will be discussed here.We recommend that you read that chapter first.

Furthermore, while reading this chapter you will notice that some recommended solutions are similar for different types of problems. This is due to the fact that the performance of your system is the result of many different interrelated factors and that problems with your hardware setup can cause a wide variety of symptoms.

For updaters from Cubase 3.0x to Cubase VST 3.55

Q: Why have the “mixing” settings I programmed in Cubase 3.0x changed?

Q: Why can’t I mix mono and stereo files on the same output channel?

Q: Why is my half-duplex audio card not working like it did?

Q: Where are the Drummaps, Mixermaps and Studio files?

Q: Why are the MIDI Processor, Style Tracks and IPS delayed?

Q: Where is the ACI (Adat Computer Interface) driver?

Q: Why are some audio channels re-used by several tracks?

MIDI

Q: What do I do when I encounter MIDI timing instability?

Q: Why are MIDI and audio tracks not properly synchronized in a system with a Windows Multimedia compatible audio card?

Audio

General audio problems

Q: What do I do when I experience audio dropouts?

Q: Why does recording stop unpredictably?

Q: Why am I experiencing audio crackling/clicks?

Q: Why are some audio recordings stuttering or not played back in their entirety?

Q: Why do I get the message “Can’t open file” while trying to process the file in the Wave Editor?

Q: Why do I get the message “Can’t access file” or “Can’t save file” while trying to edit an audio file in an external wave-editor?

Q: Why are MIDI and audio tracks not properly synchronized in a system with a Windows Multimedia compatible audio card?

Audio card issues

Q: What audio cards can I use?

Q: How do the different audio cards perform?

Q: What are the recommended configurations for my audio card?

Q: Why do I get the message “unable to obtain the input” from my audio card?

Q: Why do I get the message “unable to obtain the output” from my audio card?

Q: I have a Soundblaster card - how do I get the best out of it?

Additional hardware information

Q: Which computer types are compatible with Cubase VST 3.55 and how do they perform?

Q: Which is the best type of hard disk controller card?

Q: What type of hard disk should I use?

Frequently asked questions

Q: Why is the PC Waves Audiotrack plug-in not working with Cubase VST 3.55?

Q: Why aren’t all files placed on the hard disk when installing Cubase VST 3.55?

Q: How do I interpret the Performance window?

Q: Why has the transport bar disappeared?

Q: What is ActiveMovie, DirectShow, DirectSound and DirectX?

For updaters from Cubase 3.0x to Cubase VST 3.55

If you have updated from Cubase 3.0x to Cubase VST 3.55 you might run across some of the following questions:

Q: Why have the "mixing" settings I programmed in Cubase 3.0x changed?

There are three types of "mixing" settings:

Event volume differences

Event volumes are implemented as "Ramps" in Cubase VST 3.55. This makes it easier to create fades. It also reduces the workload on the computer, compared with the "event based" volume information found in Cubase 3.0x. We recommend that you re-edit your volume changes in VST. The volume handling is far more efficient when used in this "new" way.

Monitor volume differences

Unfortunately the 3.0x song "mixing" settings cannot be translated into a VST equivalent. Please readjust them manually. However, due to VST's enhanced methods for handling volumes, this is recommended anyway.

Master volume

New in Cubase VST is the Master Volume section. When launching Cubase VST 3.55 the Master Volume defaults to 0 dB. When this volume has been changed, it will remain at its current (latest) setting.

● Caution: When loading an old song it can happen that the output level is too high. This will result in "clipping". You can solve this by manually lowering the volumes either in the Master or Monitor section.

Q: Why can't I mix mono and stereo files on the same output channel?

Cubase VST 3.55 cannot mix mono and stereo files on the same output channels. Stereo files will use two channels, the base channel for the left channel in the stereo file and the consecutive channel for the right channel. Each channel will get individual EQ and volume settings. Both channels are linked for convenience, but they can also be edited separately.

If mono and stereo files are on the same output channels, you have to perform a manual separation:

1. **Open the song that contains both mono and stereo files on the same output channel.**

2. **Drag the mono and stereo parts to separate channels.**

Q: Why is my half-duplex audio card not working like it did?

"Half duplex" means that the card can't perform recording and playback simultaneously.

The handling of half-duplex cards has changed completely. Cubase VST 3.55 is optimized for full duplex cards.If an input bus is activated for a half-duplex card, recording is possible but play back is suspended. If the same input bus is deactivated, play back is possible but recording is suspended.

If you want to record using a half-duplex card, please do the following:

1. **Launch the ASIO Multimedia Setup window by selecting it from the Cubase VST submenu on the Start menu.**

2. **Pull down the Presets pop-up menu.**

3. **If there is a half duplex Preset for your audio card, select this.**
   For example, if you have a Soundblaster compatible card, you should select the Preset called "Soundblaster Compatible Half Duplex".

4. **If you found a suitable Preset, click OK to close the ASIO Multimedia Setup dialog.**
   Then proceed to step 9 below.

5. **If you didn't find a Preset for your audio card, click on the "Advanced Options" button.**
   The Advanced Options dialog opens. For more detailed info about this dialog, see the chapter "Optimizing Audio Performance" in the main documentation.

6. **Make sure that the card is activated in both the Input and Output Port lists.**

7. **Pull down the Card Options pop-up menu and make sure that "Full Duplex" is *not* activated.**

8. **Click OK to close the Advanced Options dialog, and then again to close the basic ASIO Multimedia Setup dialog.**

9. **Open the Inputs window from the Audio menu in Cubase.**

10. **Activate the input of the card by clicking the corresponding "Active" button in the list.**
    When you do this, the output of the half-duplex card will automatically be deactivated. To later enable playback, deactivate the input.

Q: Where are the Drummaps, Mixermaps and Studio files?

Cubase VST 3.55 comes with a large variety of file types. Since many of these files are only used by a small percentage of all Cubase users, it has been decided that the above files will not automatically be placed on the hard disk when installing the program. If you want to use these files, please install them manually by dragging them from the CD-ROM and dropping them on the hard disk.

Q: Why are the MIDI Processor, Style Tracks and IPS delayed?

Cubase VST 3.55 can't apply the MIDI Processor, Styletracks or IPS (Interactive Phrase Synthesizer) on incoming MIDI-events without a noticeable delay. The amount of delay is determined by the value in the "System Pre-roll" setting in the Synchronization window.

In order to decrease the delay, please do the following:

1. **Open the Synchronization window from the Options menu.**

2. **Decrease the value in the System Preroll setting.**
   The delay will decrease in direct relation to this setting. The lower the value, the less the delay.

3. **Close the Synchronization window and try using the MIDI Processor, Style Tracks and IPS on incoming MIDI events.**
   The delay should now be less than before. Repeat the steps above until you are satisfied with the result.

- Please be aware that when you decrease the value for the System Preroll setting you also decrease the MIDI buffer that determines the amount of pre-calculation of MIDI information. This could cause MIDI timing instabilities (see: "What do I do when I encounter MIDI timing instability?" on page 9).

Q: Where is the ACI (Adat Computer Interface) driver?

Cubase VST 3.55 does not contain a special ACI driver. Instead the MMC (MIDI Machine Control) driver will be used. Unlike in Cubase 3.0x, the MMC driver cannot be deactivated, it is always available. There is a firmware version available for the ACI which supports MMC with deferred play commands, as required by Cubase VST 3.55's MMC implementation. Please contact your local Steinberg distributor if you have any problems.

Q: Why are some audio channels re-used by several tracks?

If you have changed the number of audio channels in the Audio Systems Settings window, and you open a song that originally used more audio channels than your current setting allows, the same channels will be re-used by several tracks. 'This may inhibit some audio playback since Cubase VST 3.55 cannot play more than one audio file per channel simultaneously. Please increase the number of audio channels in order to cure this problem.

MIDI

Q: What do I do when I encounter MIDI timing instability?

If MIDI events that once were “tight” suddenly are slightly delayed in a random fashion, you are experiencing MIDI timing instability.

Related information on this subject is also found in the section: “Why are MIDI and audio tracks not properly synchronized in a system with a Windows Multimedia compatible audio card?” on page 10.

If you encounter MIDI timing instability, please check the following Cubase VST settings:

System Preroll (Synchronization...)

The System Preroll setting in the Synchronization window determines the amount of pre-calculation of MIDI information. System preroll works like a MIDI buffer (“storage area”) ensuring that all MIDI messages are prepared in advance just before the actual playback. The higher the value, the more MIDI information will be pre-calculated. This increases the accuracy of MIDI timing.

In order to raise the System Preroll setting, proceed as follows:

1. **Open the Synchronization window from the Options menu.**

2. **Increase the value in the System Preroll setting.**
   The default value is 500 ms which works on most systems. There is no point in raising this value above 2000 ms.

3. **Close the Synchronization window and start playback. Check whether the MIDI timing is tighter.**
   Repeat the above steps until you are satisfied with the result.

- Please note that the higher the value the bigger the delay of all realtime MIDI processing (see: “Why are the MIDI processor, Style Tracks and IPS delayed?” on page 8).

Priority Setting (Audio System...)

Using the Priority setting in the Audio System Setup window, you can determine the priority of MIDI versus audio. With the “Low” option selected, Cubase VST 3.55 will give MIDI a higher priority than audio, and with the “Highest” option selected, it will process audio with a higher priority than MIDI. The other options allow various settings between these extremes.

Giving MIDI a higher priority will decrease the tendency of MIDI timing instability. Proceed as follows:

1. **Open the Audio System Setup window from the Audio menu.**

2. **Change the value in the Priority setting.**

3. **Close the Audio System Setup window and check whether MIDI timing is tighter.**
   Repeat the above steps until you are satisfied with the result.

● Caution: Selecting a higher priority for MIDI will increase the accuracy of MIDI timing but will decrease audio performance and may cause dropouts if your system has limited processing power.

Color Depth

The color depth (number of colors) can influence MIDI timing. By reducing the number of colors to 256, less processing time is required for performing graphic updates. This allows your computer to allocate more processing time for MIDI (and audio) which decreases the risk of MIDI timing instability.

Q: Why are MIDI and audio tracks not properly synchronized in a system with a Windows Multimedia compatible audio card?

If MIDI and audio tracks drift in relation to each other, they are not properly synchronized. This may also cause irregularities in MIDI performance, similar to MIDI timing instability, as MIDI playback may periodically get faster and slower. If this happens, you need to check the Sync Reference setting in the ASIO Multimedia Setup:

In the Advanced Options dialog (opened from the ASIO Multimedia Setup window) you find the "Check Buffers and Sync" option. It will help you to find the optimal synchronization settings for your audio card. Its purpose is to check that the synchronization settings are correct for your audio card. The displayed results of the window will direct you to further changes to the setting of your system.

1. **Open the Audio System dialog and click the ASIO Control Panel button.**
   The basic ASIO Multimedia Setup dialog opens.

2. **Click on "Advanced Options..." .**
   The Advanced Options dialog opens. For detailed info about this dialog, please refer to the chapter “Optimizing Audio Performance” in the main documentation.

3. **Locate the Port that is currently used as Sync Reference in the Port lists, and select it.**
   The last column in the Port lists shows which Port is Sync Reference.

4. **Click on the "Check Buffers and Sync..." button.**
   The “Check Buffers and Sync” dialog opens. Here you can check whether your settings will work properly, by running a test.

5. **Set a test period with the slider.**
   We recommend that you select the maximum duration (5 minutes) for the test. Then, a successful test indicates that Audio-MIDI sync should be stable for at least 5 minutes.

6. **Click the Start button to run the test.**
   The test begins. The duration of the test is indicated by the progress bar below the Test Period slider.

7. **Wait until the test is completed or, if the "Sync lost" value (in the upper left corner of the dialog) is building up rapidly, click the "Stop" button to stop the test.**
   If the test was successful, an alert will tell you so. If Sync or Buffers were lost, you will be informed of what went wrong, and get some suggestions about what you can do to remedy the problem:

- **If the "Sync lost" value builds up, this indicates that MIDI to Audio synchronization is unstable.**
  Try any of the following methods, and run the test again:
  - Switch between Sync Reference "Sample Position" and "DMA Block".
  - Use the "Detect Buffer Size..." option in the Advanced Options window.
  - If you are using the "Sample Position" Sync Reference, try increasing the Buffer size manually.
  - Check that no background tasks currently run on your computer (see Q: What do I do when I experience audio dropouts?).

● If you use the DMA Block type of Sync Reference, you should not adjust the Block sizes manually! Instead use Detect Buffer Size function in the Advanced Option window.

- **If the "Buffer lost" value (below the "Sync lost" value) builds up, this indicates audio dropouts.**
  See page 13.

8. **Try out different values until the test is successful.**

9. **Click Apply Buffer Settings and then OK.**
   You are returned to the Advanced Settings dialog, with the new settings applied to the selected Port.

● Increasing the number of buffers and the buffer size will also increase the latency (the time between the moment Cubase VST sends out the data and when it actually arrives on the output).

General audio problems

Q: What do I do when I experience audio dropouts?

If audio tracks sometimes turn silent during recording or playback, you are experiencing audio dropouts.

Related information on this subject is also found in the sections: “Why am I experiencing audio crackling/clicks” on page 15, and “How do the different audio cards perform?” on page 22.

Here’s a list of things to check if you experience audio dropouts:

- **Decrease the number of colors for the display.**
  This allows your computer to spend more of its processing time on audio (and MIDI). 16-, 24- or 32-bit true color display settings can severely hamper realtime audio performance on some computer configurations.
- **Turn off the Microsoft Office FastFind option.**
  FastFind should not be enabled since its activities can interrupt all audio processing in the system.
- **Do not use any scheduled background tasks in the Windows Plus package.**
  Functions that operate in the “background” use up valuable processor time needed for processing audio.
- **Turn off your screen saver.**
  It is not recommended to use a screen saver while running Cubase VST 3.55. Screen savers with a lot of animation are especially unsuitable since they use up a lot of processing time.
- **Turn off the “Auto-Notification” option for the CD-ROM drive.**
  This option is located in the CD-ROM drive properties page in the Device Manager (System control panel). If this is turned on, the insertion of a CD-ROM can interrupt the audio processing.
- **If no audio playback/recording is possible whatsoever, choose “Reset Devices” from the Options menu.**
  If the audio drop-out occurred because of computer “overload” (i.e. another task took too much processing time away from the audio output), choosing “Reset Devices” from the Options menu may reactivate audio playback. If you are using a poorly written Windows Multimedia audio driver, it might even be necessary to restart Windows completely in order to cure this problem. If this is the case you should try to get a newer audio card driver from the manufacturer.

When using the ASIO Multimedia driver:

There is an additional possible solution to the problem of audio dropouts when using the ASIO Multimedia driver: You might have to increase the number of audio buffers or the buffer size. This is done in the ASIO Multimedia Setup Advanced Options dialog, and we recommend that you use the “Check Buffers and Sync...” function to do it:

1. **Open the Audio System dialog and click the ASIO Control Panel button.**
   The basic ASIO Multimedia Setup dialog opens.

2. **Click on "Advanced Options..." .**
   The Advanced Options dialog opens. For detailed info about this dialog, please refer to the chapter “Optimizing Audio Performance” in the main documentation.

3. **In the Port list, select the Port you have problems with.**
   The “Check Buffers and Sync” function can only test one Port at a time.

4. **Click the “Check Buffers and Sync” button.**
   The “Check Buffers and Sync” dialog opens. At the top of the dialog, the name of the selected Port is displayed.

5. **Set a test period with the slider.**
   We recommend that you select the maximum duration (5 minutes) for the test. Then, a successful test assures that for at least 5 minutes no audio buffers should be lost.

6. **Click the Start button to run the test.**
   The test begins. The duration of the test is indicated by the progress bar below the Test Period slider.

7. **Wait until the test is completed or, if the “Buffer lost” value (in the upper left corner of the dialog) is building up rapidly, click the “Stop” button to stop the test.**
   If the test was successful, an alert will tell you so. If Sync or Buffers were lost, you will be informed of what went wrong, and get some suggestions about what you can do to remedy the problem:

- **If the “Buffer lost” value builds up, this indicates audio dropouts.**
  Try any of the following methods, and run the test again:
  - Increase the number of audio buffers.
  - Use the "Detect Buffer Size..." option in the Advanced Options window.
  - If you are using the “Sample Position” Sync Reference method, try increasing the Buffer size manually.
  - Check that no background tasks currently run on your computer.

● If you use the DMA Block type of Sync Reference, you should not adjust the Block sizes manually! Instead use Detect Buffer Size function in the Advanced Option window.

- **If the “Sync lost” value (above the “Buffer lost” value) builds up, this indicates that MIDI to Audio synchronization is unstable.**
  See page 10.

8. **Try out different values until the test is successful.**

9. **Click Apply Buffer Settings and then OK.**
   You are returned to the Advanced Settings dialog, with the new settings applied to the selected Port.

● A successful test doesn’t automatically ensure that audio playback and recording will be troublefree! When doing “real” audio work in Cubase VST, the computer may have additional tasks which could decrease the performance. The Buffers and Sync test should be viewed as a guide, not an absolute rule.

Q: Why does recording stop unpredictably?

If recording stops for no apparent reason, please try disabling the following while recording audio (see above for a detailed explanation on how to perform these operations):

- **Screen Saver.**
- **Network.**
- **CD-ROM Autorun.**

  The power management (energy saving) functions in the Windows control panel and in the BIOS.

Q: Why am I experiencing audio crackling/clicks?

There may be several different reasons for this:

Graphic cards

Graphic card drivers (e.g for Matrox cards) can block the PCI bus when screen updates occur. Some graphic card manufacturers have discovered that they can increase the card's performance by designing drivers that send commands over the PCI bus without checking whether the card is ready to receive them or not (ignoring the queue check of the graphic card). If the card is not ready, the PCI bus is blocked until the card can receive the commands. As a result no other activities can occur in the computer, which in turn may cause crackling/clicks (as well as temporary dropouts and channel swapping).

Indication of this kind of problem:

- Crackling is more intense when the Arrangement window is updated after the song position pointer reaches the right side of the window (in Follow Song mode).
- Crackling occurs when any of the Transport, Monitor or Master windows are displayed. If they are not displayed no crackling occurs.
- Crackling happens more often when 16-, 24- or 32-bit color display modes are used.
  In order to solve this problem, you can either simply turn off the PCI performance enhancements in the graphic card driver, get a new and better driver (if available) or change the settings in the driver so that it doesn't send commands to the card until it is ready to receive them. Here are recommendations for some common graphic card drivers (please contact the manufacturer if your graphic card driver is not mentioned below).

- **ET6000 VGA driver**
  If you are using an ET 6000 VGA driver you should get the latest driver from Tseng labs.

- **DV95112 (new driver for Hercules Dynamite 128 card)**
  For the Hercules Dynamite 128 card, there is a new driver called DV95112 (Version 1.12). If you want this driver to hold commands until the card is ready, please do the following:

1. **In the system.ini file, under the heading [Hercules], find the line that reads "Optimization=0"**

2. **Set this to "Optimization=1".**

3. **Save the system.ini file and restart.**

- **Matrox Millennium**
  If you are using the Matrox Millennium, please do the following in order to stop the driver from blocking the PCI bus:

1. **In the system.ini file, add the following lines: [mga.drv], PCI Chipset=1.**

2. **Disable the "Use Power GDI acceleration" feature in the Advanced Matrox setup (Control Panel->Display Properties->MGA Settings->Advanced->Performance).**

- **Matrox Mystique**
  Owners of Matrox Mystique, please do the following in order to make the driver hold commands until the card is ready to receive them:

1. **Go to Screen Properties (right click in main window.)**

2. **Go to Setting Tab and click on the PowerDesk button.**

3. **Uncheck "Use Bus Mastering".**

4. **Uncheck "Use Automatic PCI Bus retries".**

5. **On computers equipped with a Pentium Pro processor, uncheck "Use Write-Combining", if possible.**

6. **Click OK.**

- **S3 drivers**
  The staff at S3 have reported that "all" S3 drivers (downloaded from www.s3.com) for all of their VGA cards can be fixed by adding a line in the system.ini file:

1. **Find the [display] section in the system.ini file.**

2. **After [display] add the line "bus-throttle=1" (or "BusThrottle=1").**

3. **Save the system.ini file and restart.**

PCI bus settings

Incorrect PCI bus settings in the BIOS can create crackling (especially the "PCI Latency" parameter). Changing PCI settings is a very delicate matter. Consult your computer dealer for assistance.

In addition, on computers equipped with a Pentium Pro processor the "Write Combining" feature can result in audio problems with DMA based sound cards (like SoundBlaster) and Windows Sound System compatible cards (like TerraTec Maestro). If you can, try turning this feature off for increased audio performance. However, not all BIOS setups allow access to this PCI bus setting.

High Speed SCSI cards

High performance SCSI cards like Adaptec AHA-2940UW or other Ultra-Wide SCSI host adapters can block the PCI bus because of the high data rate, which may cause crackling/clicks. This usually occurs with bus master audio cards like the Korg 1212 I/O and Event Electronics' Darla/Gina by Echo.

If you experience crackling/clicks while using a high performance SCSI card, try reducing the maximal transfer rate of the SCSI bus to 10 MB/s.The 10 MB/s setting is still enough for up to 32 simultaneous audio tracks. Please refer to the manual that came with the SCSI card for information on how to change this setting.

In addition, if the computer contains a PCI bridge it might help to put the SCSI and audio card on separate PCI segments. For example; a computer with 6 slots might be implemented as two PCI segments with 3 slots each. If a board has got more than 5 PCI slots it will definitely have a PCI bridge. The board's manual should explain which slots are on the same segment.

External Word-Clock Sync

External synchronization of audio differs from synchronizing MIDI. In order to achieve proper synchronization of digital audio signals it is vital that all devices remain locked to a common sampling rate reference clock. One method of achieving this is through a digital reference signal called a word clock.

Unfortunately, different types of digital audio devices (S/PDIF, AES-EBU or ADAT) are not synced to the same type of word clock.

Some audio cards that are equipped with different types of digital inputs contain a sample rate converter and can therefore accept non-matching word clocks for the input and the internal processing.

However, if no sample rate converter is involved, occasional clicks may occur. One example is the Korg 1212 I/O card, which will exhibit this problem when the S/PDIF and ADAT inputs are used simultaneously, but the source devices are not synced to a common word clock (for example a CD-Player and an ADAT).

In addition, if a device connected to the digital output of an audio card does not sync to the digital audio clock from the card, the recordings made with that device may contain occasional clicks, even though the original recording doesn't.

Q: Why are some audio recordings stuttering or not played back in their entirety?

If you encounter audio stuttering, or if parts of audio recordings are “missing”, please read the following:

Tempo changes

If you have raised the tempo of a song, after recording audio, some audio events may be interrupted by a following event. This happens when the preceding event has not finished playing before the next one starts. Please change back to the original tempo.

Mono and stereo files

Some audio files may be silent when you play a song recorded in Cubase 3.0x that contains mono and stereo files on the same channel. Please separate them by dragging them to individual channels (see: “Why can’t I mix mono and stereo files on the same output channel?” on page 6).

Buffer size/number of buffers in the ASIO Multimedia Setup window

Having too few and too small buffers may cause stuttering just as it may cause audio dropouts (see: “When using the ASIO Multimedia driver” in the section “What do I do when I experience audio dropouts” on page 12).

Another application is started

If you launch another application while Cubase VST 3.55 is running, the audio playback may be temporarily affected.

CPU or disk overload

If you encounter audio stuttering, and the Performance window shows that either the CPU or the disk is overloaded, please decrease the number of audio tracks by muting some, or by performing a “mix-down”. For information on how to perform this operation, please refer to the section: “Mix Down” in the online documentation (Getting Into the details).

Q: Why do I get the message “Can’t open file” while trying to process the file in the Wave Editor?

If you try to process an audio file in the Wave Editor and Cubase VST 3.55 gives you the message “Can't open file”, it probably means that the file is set to “read only” (write-protected) in Windows. Use the Explorer to change the settings for the particular file.

Q: Why do I get the message “Can’t access file” or “Can’t save file” while trying to edit an audio file in an external wave-editor?

If you are using an external wave editor together with Cubase VST 3.55, you may get the message “Can’t access file” or “Can’t save file” while trying to edit an audio file in the wave editor. If this happens, please turn off the “Play in background” setting in the Preferences window (File menu). This setting may interfere with an external wave editor.

Audio card issues

Q: What audio cards can I use?

Cards tested with Cubase VST:

Creative Labs:

SoundBlaster 16 (stereo analog in/out, MIDI, ISA).

SoundBlaster AWE 32 (stereo analog in/out, MIDI, ISA).

SoundBlaster AWE 64 (stereo analog in/out, MIDI, ISA).

SoundBlaster AWE 64 Gold (stereo analog in/out, stereo S/PDIF out, MIDI, ISA).

Digital Audio Labs:

CardD+ (stereo analog, ISA).

Digital Only Card (stereo S/PDIF, ISA).

Event:

Darla by Echo (stereo analog in, 8 analog out, PCI).

Gina by Echo (stereo analog in, 8 analog out, Stereo S/PDIF, PCI).

Frontier Design Group:

WaveCenter (8 ch. ADAT digital I/O, Stereo S/PDIF, MIDI, ISA).

Hohner Midia:

ARC-44 (4 chan. analog, ISA).

RME-Audio:

DIGI32 (stereo S/PDIF, PCI).

TerraTec:

EWS64XL (2 in/4 out analog and S/PDIF, MIDI, ISA).

Maestro 32/96 (stereo analog, MIDI, ISA).

TurtleBeach:

Fiji (stereo analog, stereo S/PDIF optional, MIDI, ISA).

Pinnacle (stereo analog, stereo S/PDIF optional, MIDI, ISA).

Tahiti (stereo analog, MIDI, ISA).

Cards with limited support in Cubase VST:

Digidesign:

Audiomedia 3 (the MME driver of this card does not support full duplex).

Emagic:

AudioWerk 8 (limited Windows Multimedia driver support).

Roland:

RAP-10 (generally VST PC does not support mono full duplex anymore).

Creamware:

Triple Dat and Masterport (the latest version of the MME driver for these cards allow stereo full-duplex operation only).

Q: How do the different audio cards perform?

Multi-I/O audio cards

Cubase VST's ASIO Multimedia driver will support multi I/O audio cards with either multiple stereo or multi-channel wave devices.

The de-facto standard for synchronized start of wave devices on one card is supported as well. If the audio card driver supports this standard, sample accurate synchronization between multiple wave devices on one card is guaranteed.

ASIO drivers for Multi-I/O audio cards

We are currently working together with several audio card manufacturers to create ASIO drivers for Cubase VST. These include, among others, Lexicon, Korg, Event/Echo, Sonorus and TerraTec, among others.

ISA cards require CPU performance

Multi-channel sound cards for the ISA bus require a lot of CPU performance. Simultaneous 8 channel I/O (4 inputs and 4 outputs) will use 30% to 50% of the available CPU performance.

However, it is possible to perform a manual deactivation of the unused inputs and outputs in order to decrease the demand on CPU performance. Proceed as follows:

1. **Open the Inputs window from the Audio menu.**

2. **Deactivate any unused Inputs by using the "Active" buttons in the list.**

3. **Close the Inputs window.**

4. **Open the Master window, from the Audio menu.**
   If your card has more than one output, this will have one or more Bus sections, to the right.

5. **Deactivate any unused Output buses by using the Active buttons.**

Soundblaster 16/AWE-32 and AWE-64

The full-duplex mode of the Soundblaster series is supported. However, the general Soundblaster limitations apply:

- If recording is operated with 16-bit quality, playback happens with 8-bit quality.
- If playback is operated with 16-bit quality, recording can only happen with 8-bit quality.

In Cubase VST, 8-bit audio recording is not possible. Therefore, the Soundblaster limitations have the following implications:

- **To enable audio recording, open the Inputs window on the Audio menu and activate the card's audio input.**
  All playback will now be in 8-bit quality (provided that the full duplex mode is selected, see below).

- **To enable 16-bit audio playback, open Inputs window and deactivate the card's audio input.**
  Audio recording is now disabled.

In the ASIO Multimedia Preset list you will find two operation modes for the Soundblaster series or compatible cards. One will set up the system for full duplex operation. However, there may be situations when you have to select the Preset for half duplex operation:

- When you want to use the WaveSynth/WG MIDI Device on a card in the AWE-64 series (see page 26).
- When the full-duplex operation does not work reliably on your computer setup.

For instructions on how to select the half duplex mode, see page 7.

It has also been reported that on some motherboards, the SoundBlaster full duplex mode can be stabilized by increasing the "I/O recovery time" in the extended BIOS or Advanced Chipset setup.

About the Soundblaster AWE-64

The AWE-64 is basically the same hardware as the AWE 32. However, AWE 64 creates the expanded sound possibilities by using CPU power of the host computer. This will decrease overall audio performance.

● Note: To be able to use full duplex operation you have to disable the Wave synth/WG MIDI device on the AWE-64. Sometimes it will be necessary to deactivate the Creative Music Mapper too. This is done in the SetupMME dialog, as described on page 26.

Q: What are the recommended configurations for my audio card?

With the ASIO Multimedia Setup Presets, many users will not need to change any settings in the Advanced Options dialog. However, if you have an audio card for which there is no Preset, or if you need to change the settings for some other reason, use the following list of recommendations as a starting point. The list will be updated regularly. Please check out our Web Site, <http://www.steinberg.net> to get additional information and the latest hints and tips.

Creative Labs' SoundBlaster 16, AWE 32, AWE 64 or AWE 64 Gold

- **Sync Reference**
  Sample Position: Output
- **Card Options**
  Activated: Full Duplex, Start Input First
  Deactivated: Open all Devices before Start
  Audio Buffers: 5
  Buffer Size: 5512

Digital Audio Labs' CardD+ and Digital Only Card

- **Sync Reference**
  DMA Block: Output
- **Card Options**
  Activated: Full Duplex, Start Input First
  Deactivated: Open all Devices before Start
  Audio Buffers: 5
  Buffer Size: 4096

Event Electronics' Gina and Darla by Echo

- **Sync Reference**
  Sample Position: Output
- **Card Options**
  Activated: Full Duplex, Start Input First, Open all Devices before Start
  Deactivated: none
  Audio Buffers: 5
  Buffer Size: 4096

Hohner Midia ARC-44

- **Sync Reference**
  Sample Position: Output
- **Card Options**
  Activated: Full Duplex, Start Input First, Open all Devices before Start
  Deactivated: none
  Audio Buffers: 5
  Buffer Size: 4096

RME Intelligent Audio Solutions' DIGI32

- **Sync Reference**
  Sample Position: Output
- **Card Options**
  Activated: Full Duplex, Start Input First, Open all Devices before Start
  Deactivated: none
  Audio Buffers: 5
  Buffer Size: 4096

● Note: If no S/PDIF signal is applied to the input, or the sample rate of the incoming signal is different from Cubase VST's sample rate, the input will not be accessible and a warning will be displayed.

TerraTec EWS64XL

- **Sync Reference**
  DMA Block: Output

● Note: The Codec port must be used for Sync Reference. Please make sure that this port is at the top of the list in the Output Ports box in the ASIO Multimedia Setup window. If necessary, move this port upwards by selecting it and clicking on the “Move up” button, until it is at the top of the list.

- **Card Options**
  Activated: Full Duplex, Start Input First, Open all Devices before Start
  Deactivated: none
  Audio Buffers: 5
  Buffer Size: 5512

Q: Why do I get the message “unable to obtain the input” from my audio card?

Full duplex operation

Does your audio card support full duplex operation (recording while playing)? If not, you can enable either the input or the output of the device, but not both at the same time (see also page 7).

Digital Input

For some audio cards it is necessary to apply a signal to the digital input of the card whenever you want to use it. If no digital signal is connected, the input of the card will not be enabled, and a warning message is displayed.

Also, you have to make sure that the Sample Frequency in the Audio System Settings matches the one of the incoming digital audio signal.

- **If you find the warning message a problem, turn off the digital input in the Inputs window and save a new DEF.ALL file.**
  From then on the digital input has to be enabled manually before recording.

Q: Why do I get the message “unable to obtain the output” from my audio card?

Full duplex operation

Does your audio card support full duplex operation (recording while playing)? If not, you can enable either the input or the output of the device, but not both at the same time. (see also: “Why is my half-duplex audio card not working like it did?” on page 7).

Software synthesizer

If you are using the Windows Multimedia driver to play back audio, Cubase VST 3.55 cannot play back MIDI via software synthesizers (like Roland's Virtual Sound Canvas, Seer's Reality or Creative Labs' WaveSynth) and play audio via the same audio card, simultaneously. You will need to deactivate the MIDI output ports for these software synthesizers. Proceed as follows:

1. **Start the Setup MME program which comes with Cubase.**

2. **In the MME Outputs box, click on the name of the software synthesizer.**

3. **Deactivate the MIDI output port for the software synthesizer by clicking on the Set Inactive button to the right.**

- If your audio card has a DirectX driver installed, and the software synthesizer is DirectX compatible, it is possible to play back audio from Cubase VST and the software synthesizer simultaneously, by selecting the ASIO DirectX driver in Cubase VST’s Audio System dialog. However, due to DirectX limitations, this will disable all audio input in Cubase VST (see the chapter “Optimizing Audio Performance” in the main documentation for more information about the DirectX driver). Also, this will most likely require a fast computer.

Sample editor

Cubase VST 3.55 is not able to gain access to the audio card when a sample editor (like Sound Forge or Wavelab) plays back audio. Please stop playback in the sample editor before you switch to Cubase.

Additional hardware information

Q: Which computer types are compatible with Cubase VST 3.55 and how do they perform?

Supported CPU types

Cubase VST 3.55 works with:

• Intel: Pentium, Pentium MMX, Pentium Pro, Pentium II

• AMD: K5, K6

• Cyrix/IBM: 6X86, 6X86MX

When choosing a processor, please be aware that floating point operations are crucial for the audio performance of Cubase VST. In this respect Intel Pentium CPUs are more powerful than the current AMD and Cyrix/IBM CPUs.

● The complete computer configuration has a huge impact on the overall performance. A supposedly slower CPU can provide superior performance in an otherwise good configuration compared to a "bad" configuration with a fast CPU.

Q: Which is the best type of hard disk controller card?

The hard disk controller handles transfer of data from and to the hard disk. A controller card with less CPU intervention leaves more CPU power for audio processing.

- **PIO (programmed I/O)**
  When a controller uses something called PIO (and sometimes FIFO) it means that the CPU itself performs the data transfer from and to the hard disk. This will decrease the time the CPU can spend on audio processing.
- **Busmaster**
  A busmaster controller on the other hand, will perform the data transfer from and to the disk with very little CPU intervention. During the actual data transfer the CPU can still perform audio processing.

Q: What type of hard disk should I use?

E-IDE

E-IDE hard disks are cheap and offer a high capacity (up to 6 GB on 3.5 inch disks as of this writing).

Generally, E-IDE hard disks do not offer the same level of performance as compatible SCSI disks. However, the performance of some SCSI and E-IDE drives are identical. Therefore SCSI disks are not *always* better/faster.

E-IDE controllers usually use the CPU to perform the data transfer from/to disk (PIO or FIFO), which means that less CPU power is available for Cubase VST's audio processing.

UltraDMA E-IDE controller cards (and some new motherboards) contain “busmaster” E-IDE controllers. These will relieve the CPU from transferring data, and allow it to spend more time on processing audio.

E-IDE ISA controllers are not recommended.

SCSI

SCSI hard disks are rather expensive but offer high speed and capacity (up to 9 GB on 3.5 inch disks as of this writing).

The highest performance disks are currently only available with SCSI (Seagate Barracuda, Quantum Atlas II).

Several SCSI disks can operate simultaneously and deliver a higher combined data throughput.

SCSI Busmaster controllers (like the Adaptec AHA-2940) are recommended.

SCSI PIO controllers (like Adaptec AHA-2920) can be used, but the number of audio channels and EQ/FX will be lower.

SCSI ISA controllers (like Adaptec AHA-1520 or AHA-1542) are not recommended.

● Note: For the best possible performance setup, a SCSI busmaster controller and a high end SCSI hard disk are recommended. But even with E-IDE setups, impressive audio performance can be expected!

Frequently asked questions

Here are some frequently asked questions that are directly or indirectly related to using Cubase VST 3.55.

Q: Why is the PC Waves Audiotrack plug-in not working with Cubase VST 3.55?

The AudioTrack plug-in is a DirectX plug-in, which means you have to have DirectX installed to run it. When you install Cubase VST 3.55 from CD-ROM, DirectX 5.1 is automatically installed, but this might not be the case if you have downloaded a new VST version from Internet, etc. Refer to the Microsoft web page for information on how to get and install DirectX.

Q: Why aren't all files placed on the hard disk when installing Cubase VST 3.55?

Please read: "Where are the Drummaps, Mixermaps and Studio files?" on page 8.

Q: How do I interpret the Performance window?

In the Performance window (Audio menu) you can view the performance of the CPU and the disk. Please be aware that 100% does not equal maximum VST power. It means 100% of the whole computer power. The highest level you can reach when working with VST is around 60-70% of the display.

In addition, when viewing the Performance window, it is quite normal for the disk bargraph "stick" in the middle of the display while you move the windows around.

Q: Why has the transport bar disappeared?

It is possible to accidentally move the transport bar so that it is hidden below the Windows Task Bar. If this happens, please move the task bar either to the top or the side of the screen by clicking on an "empty" area and dragging it. The transport bar should then be visible and you can move it to a suitable place. If the transport bar is still not visible after moving the Task Bar, please choose "Show Transport Bar" from the Windows menu, or press button F12 on the computer keyboard.

Q: What is ActiveMovie, DirectShow, DirectSound and DirectX?

The term “ActiveMovie” is no longer used, but has been replaced by “DirectShow” (a subset of Microsoft DirectX). This is how it all works:

- Microsoft **DirectX** is a complete package for handling various kinds of multimedia under Windows95 and Windows NT.
- DirectX is divided in two layers: **DirectX Foundation** and **DirectX Media**.
- **DirectX Foundation** contains system-level drivers and routines. This is the part of DirectX that communicates with the computer hardware.
  The only part of DirectX Foundation that is used by Cubase VST is called **DirectSound**. This is what you use if you select the ASIO DirectX driver for playing back audio in Cubase VST.

- **DirectX Media** contains services on the application level. This is the part of DirectX that communicates with the applications and programs.
  The only part of DirectX Media that is used by Cubase VST is **DirectShow** (previously called ActiveMovie), a standard for media playback, streaming and capture. This is the standard used by DirectX effect plug-ins in Cubase VST.

● In the Cubase VST documentation, the general term DirectX is used for both DirectShow and DirectSound.